

ASSIGNMENT 9

Textbook Assignment: "Communication Theory," chapter 10, pages 10-19 through 10-56; and "Teletype and Facsimile Equipment," chapter 11, pages 11-1 through 11-15.

- 9-1. In what frequency range do the URA-38, SRA-56, and SRA-58 couplers operate?
1. HF
 2. VHF
 3. UHF
 4. SHF
- 9-2. In what frequency range(s) does the SRA-33 coupler operate?
1. HF
 2. UHF
 3. SHF
 4. All of the above
- 9-3. Which of the following is a measure of a receiver's ability to reproduce weak signals?
1. Selectivity
 2. Sensitivity
 3. Detection
 4. Reproduction
- 9-4. A high signal-to-noise ratio is desirable in radio receivers.
1. True
 2. False
- 9-5. Which of the following actions take(s) place during "heterodyning"?
1. Production of the IF frequency
 2. Combining of the incoming signal with the local oscillator signal
 3. Both 1 and 2 above
 4. Amplification of the audio component
- 9-6. Which stage of a radio receiver converts the modulated signal to an audio signal?
1. Amplifier
 2. Detector
 3. Local oscillator
 4. Converter
- 9-7. What device converts sound into electrical energy for use in modulating the transmitter for the transmission of a signal?
1. Handset
 2. Tuner
 3. Modulator
 4. Antenna
- 9-8. Which of the following device(s) allow(s) transmitters and receivers to be remotely selected and used?
1. Radio set control
 2. Switchboards
 3. Both 1 and 2 above
 4. Transfer stations
- 9-9. Which of the following device(s) convert(s) dc signals into tone signals?
1. AN/UCC-1
 2. CV-2460
 3. Both 1 and 2 above
 4. SB1203/UB

9-10. Which of the following statements is/are true for line-of-sight transmission and reception?

1. The stations must be in view of each other
2. The transmission range is usually short
3. The station antennas must be aimed at one another
4. All of the above

9-11. Which of the following devices encrypts a transmitted signal to prevent its use by an enemy?

1. Handset
2. Voice switching set
3. Secure voice equipment
4. Secure voice matrix

9-12. Which of the following radios is used by shipboard personnel on shore or aboard small boats in a duty status?

1. AN/PRC-96
2. AN/CRT-3A
3. AN/PRC-41
4. Both 2 and 3 above

9-13. By which of the following means can you increase the maximum permissible number of intelligible transmissions on a single path?

1. Multiplexing
2. Single audio mixing
3. Modulation
4. Signal splitting

9-14. Which of the following requirements does SAS provide?

1. Secure voice communications
2. Non-secure voice communications
3. Voice signal switching
4. All of the above

9-15. Which of the following recent developments has/have greatly improved worldwide radio communications?

1. More powerful transmitters
2. More efficient antennas
3. Satellites
4. All of the above

9-16. Which of the following terms pertains to transmissions made to a satellite?

1. Mode coupling
2. Mean time transmission
3. Uplink
4. Inverted parametric

9-17. What purpose does CUDIXS/NAVMACS serve?

1. Acts as the central communications medium for operating naval units
2. Provides the network used for transmission of general service message traffic between designated ships and shore installations
3. Provides a communications link between submarines and shore terminals
4. Provides a one-way broadcast for tactical information

9-18. What purpose does OTCIXS serve?

1. Provides an interbattle group command and control network for battle force coordination
2. Provides status reporting and management of FLTSATCOM system assets
3. Provides a one-way broadcast of tactical information from command centers ashore
4. Acts as a special intelligence communications system

9-19. Which of the following is a subsystem specifically designed for special intelligence communications?

1. OTCIXS
2. TADIIXS
3. TACINTEL
4. FLTSATCOM

9-20. How many FLTSATCOM shore terminals are located in various areas throughout the world?

1. 1
2. 2
3. 3
4. 4

9-21. What system was developed to multiplex several users on one 25-kHz satellite channel?

1. ASAS/MSAS
2. VINSON
3. DAMA
4. FLTSATCOM

9-22. Which of the following procedures ensures optimum performance of shipboard communications systems?

1. Quality monitoring
2. NAVMACS reviews
3. CUDIXS evaluations
4. Test requirement analysis

9-23. Which of the following is a condition that could produce physical electromagnetic disturbances that would affect electronic equipment adversely?

1. EMC
2. EMI
3. PED
4. RFP

9-24. Personnel can be injured by severe electromagnetic interference.

1. True
2. False

9-25. What type of interference can be generated from the mixing of two signals in a receiver stage or final stage of a transmitter?

1. EMI
2. BBN
3. IMI
4. ESPN

9-26. From which of the following sources can you obtain assistance for EMI problems?

1. MOTUs
2. IMAs
3. Other ships
4. All of the above

9-27. Which of the following is a NAVSEA managed program that helps identify and solve EMI problems?

1. NAVSHIPS
2. SEMCIP
3. NAVTELCOMP
4. TEMPEST

9-28. What division of the SEMCIP program is responsible for the locating and repair of EMI problems?

1. TEMPEST
2. NAVELEX
3. WCAP
4. CSRR

9-29. In which of the following publications can you obtain guidance in additional requirements for EMI protection?

1. DOD-HDBK-263
2. MIL-STD-1310
3. MIL-STD-1364
4. MIL-HDBK-225AS

QUESTIONS 9-30 THROUGH 9-70 PERTAIN TO CHAPTER 11.

- 9-30. Teletypewriter signals are composed of which of the following elements?
1. Mark only
 2. Space only
 3. Both 1 and 2 above
 4. Start and stop
- 9-31. Groups of electrical pulses used in telegraph and teletype are referred to by which of the following terms?
1. Mark/space
 2. Codes
 3. Cyphers
 4. All of the above
- 9-32. What is the name of the five-level, even or constant length code used in teletypewriter operation?
1. Baudot
 2. Baud
 3. Morse
 4. USASCII
- 9-33. What code serves as a universal code for input/output purposes and for information interchange in automatic data processing?
1. RFCS
 2. ASAS/MSAS
 3. USASCII
 4. MORSE
- 9-34. Which of the following terms refer(s) to modulation rates or signaling speeds?
1. Baud
 2. Wpm
 3. Bps
 4. All of the above
- 9-35. Which of the following terms actually only pertains to modulation rate?
1. Baud
 2. Words per minute (wpm)
 3. Bits per second (bps)
- 9-36. Dc mark and space signals can be transmitted through the air without modulation.
1. True
 2. False
- 9-37. If mark and space signals are to be modulated into a carrier wave for transmission, what device converts the dc pulses into mark and space modulation?
1. Keyer
 2. Converter
 3. Modulator
 4. Pulse developer
- 9-38. After the modulated signal is received, what device(s) must be used to change the rf signal back to dc pulses?
1. AN/UCC-1
 2. Converter
 3. Both 1 and 2 above
 4. Tone shift
- 9-39. What type(s) of radio-actuated teletypes does the Navy use?
1. AFTS
 2. RFCS
 3. FSK
 4. All of the above
- 9-40. What is the most common term for RATT systems?
1. AFTS
 2. RFCS
 3. FSK
- 9-41. What device supplies looping current for the TTY?
1. A dc power supply
 2. The TTY battery
 3. An external source
 4. A dc generator

- 9-42. What TTY feature provides operational flexibility by affording every possible interconnection of TTY equipment?
1. Multiple wiring
 2. Switching
 3. TTY panel
 4. Redundant cabling
- 9-43. Which of the following methods does the Navy use to reduce fading and interference problems in long range communication frequencies?
1. High amplification of signal
 2. Improved high tech antennas
 3. Frequency diversity reception
 4. Atomospheric "bounce"
- 9-44. What method of reception uses one signal transmitter and two or more receivers?
1. Space diversity
 2. Frequency diversity
 3. Tone shift
 4. Spacing shift
- 9-45. Space diversity is mostly limited to shore stations.
1. True
 2. False
- 9-46. What method of reception uses two or more signals carrying the same intelligence transmitted on different frequencies?
1. Mark diversity
 2. Frequency diversity
 3. Tone diversity
 4. Space diversity
- 9-47. Which form of diversity is used with multichannel broadcasts?
1. Space diversity
 2. Rf diversity
 3. Tone diversity
 4. Multichannel diversity
- 9-48. Which of the following descriptions pertain(s) to simplex communication?
1. Involves a single channel on which one station may communicate
 2. Involves a single channel on which two or more stations may communicate
 3. Allows each station to transmit and receive, but not simultaneously
 4. Both 2 and 3 above
- 9-49. Which of the following methods is/are used to select and connect various teletypewriters and associated equipment?
1. Communication patch panel
 2. Teletype patch panel
 3. Patching cords
 4. All of the above
- 9-50. What color code indicates that secure (encrypted) information is being passed in a particular unit or patch cord?
1. Black
 2. Red
 3. White
 4. Blue
- 9-51. What color code indicates that unsecure information is being passed in that section?
1. Green
 2. White
 3. Black
 4. Red

9-52. If TTY switching operations are to be changed, what precaution must you take concerning the looping connection?

1. Ensure that it is placed in the proper jack
2. Ensure that proper secure/nonsecure color coding is observed
3. Ensure that safety precautions are observed, since there is a dangerous dc voltage on the exposed plug

9-53. Which of the following terms pertains to cryptographic equipment?

1. Encrypt
2. Decrypt
3. Encode/decode
4. All of the above

9-54. Whenever a transmitter is used for RFCS operation, what is the most important thing an operator must be sure of before he sends the information?

1. That all equipment switches on
2. That the carrier frequency is properly set
3. That the transmitter switchboard is properly set

9-55. What purpose(s) does the rf antenna filter serve?

1. Filters out harmonics
2. Removes rf ripple
3. Filters out any unwanted rf signals
4. All of the above

9-56. What function(s) does the comparator perform in TTY receive?

1. Acts as a filter
2. Allows only the stronger signal to be transferred
3. Compares space and frequency diversity
4. All of the above

9-57. The communication patch panel serves the same function on the receive side of the RFCS system as it does on the transmit side.

1. True
2. False

9-58. What does the term "half-duplex" refer to in AFTS?

1. Send only
2. Receive only
3. Send or receive
4. All of the above

9-59. How is the transmitter keyed to send the TTY message?

1. By the operator when he begins typing
2. By an internal relay in the tone converter
3. Both 1 and 2 above
4. By the opening of the control line

9-60. What causes the TTY to print an incoming message?

1. Mark and space tones are fed to the TTY
2. Mark and space tones are converted to relay signals
3. Relay contacts are connected in the TTY dc loop
4. Both 2 and 3 above

9-61. What is the most common multiplexing device in the fleet today?

1. AN/TRX-43
2. AN/PRC-91
3. AN/UCC-10
4. AN/MPX-24

9-62. What UCC-1 converter feature compensates for poor atmospheric reception and eliminates the need for retransmission?

1. Diversity switches
2. Automatic diversity capability
3. Static eliminator
4. Atmospheric compensator

- 9-63. What is the name of the process that allows two channels of a 16-channel shipboard multiplexing system to carry the same intelligence?
1. Multiplex exchange
 2. Multiple reception
 3. Twinning
 4. Frequency scanning
- 9-64. What brought about the change from high-level to low-level keying?
1. Unauthorized electromagnetic detection was possible with high level keying
 2. High level keying involved a high level safety hazard to personnel
 3. Both 1 and 2 above
- 9-65. Which of the following developments helped eliminate detectable emissions in TTY transmission and reception?
1. High-level keying
 2. Use of gold contact points
 3. Use of plus or minus 6-volt keying
 4. Both 2 and 3 above
- 9-66. In which of the following publications can you find information on TEMPEST requirements?
1. MIL-STD-1626
 2. DODISS, Parts 1 and 2
 3. MIL-STD-1680
 4. MIL-STD-1380
- 9-67. Which of the following procedures can be used to transmit printed text through a modem or telephone line?
1. Multiplexing
 2. Facsimile
 3. FAX
 4. Both 2 and 3 above
- 9-68. Which of the following descriptions pertain to TEMPEST?
1. Compromising emanations (CE)
 2. Signals that should not be radiated by electrical information processing equipment
 3. Unintentional signals that contain classified intelligence
 4. All of the above
- 9-69. At which of the following facilities can you obtain required TEMPEST training?
1. TYCOM approved schools
 2. MOTUs
 3. Formal TEMPEST schools
 4. All of the above
- 9-70. Which of the following publications contain(s) additional information on TEMPEST?
1. TYCOM instructions
 2. Security manual
 3. MIL-STD-1661
 4. STD-407-5287556